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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/608,136 | 06/30/2003 | Sanjay Ghemawat | 0026-0033 | 3012 |

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EXAMINER

ELMORE, STEPHEN C

ART UNIT PAPER NUMBER

2186

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/608,136 | Applicant(s) GHEMAWAT ET AL. | |
| | Examiner Stephen Elmore | Art Unit 2186 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


STEPHEN C. ELMORE
PRIMARY EXAMINER

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/3/03, 2/3/04 and 4/18/05.</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This Office action responds to the application filed June 30, 2003.
2. Claims 1-22 are presented for examination.

Priority

3. Acknowledgment is made of applicant's claim for priority based on the following provisional applications:

- 1) 60/447,277 filed on February 14, 2003;
- 2) 60/459,648 filed on April 3, 2003.

However, the inventive entity of the instant application is different from the inventive entity of either of the two applications, so the claim for priority is not approved.

Information Disclosure Statement

4. The information disclosure statement filed February 3, 2004 contains a publication entry which has been "lined-through" to indicate that the particular entry has not been considered by the Office. Publications suitable for consideration must be identified by their author(s), publication source, page numbers, publication date, etc.

The publication entry "InterMezzo, <http://www.inter-mezzo.org>, 2003" could not be considered because it is not an actual document, instead, the entry appears to identify an entire web site associated with the computer product "InterMezzo". Therefore, since neither a web site nor a computer software product qualifies as a printed publication, the listed entry has been lined-through to show it has not been considered.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are indefinite because:

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a. Claims 1 and 14-17 -- are not clear as to the nature and relationship between the elements: "one replica of data (e.g., claim 1)" or "replica of data (e.g., claim 14)", "primary replica of data", and "secondary replica of data", first, the claim nowhere mentions the "original data" from which any and all replicas of data are derived, therefore, this language is unclear because it does not identify whether the term "primary replica" is meant to refer to the "original data" itself, and so, this question is significant because the present claim language appears to be missing essential matter ("original data" in the claim), since a replica of data appears to be a meaningless concept without there being an instance of the original data from which the replica (copy) is made or derived;

b. Claims 1 and 14-17 -- are not clear because the language appears to be missing essential structural information necessary to distinguish how the elements: "one replica of data", "primary replica of data", and "secondary replica of data", are structurally or functionally different from each other, or whether these differences in nomenclature are differences in labels with which to identify merely diverse copies of original data; essentially, from the existing claim language, another problem is that these all appear to be the same thing (i.e., data replicas or copies of data except by a different name), there doesn't appear to be any functional difference in the structure of the claim between these elements, consequently, any reference containing data and two or more copies (replicas) of data would appear to meet these elements since they could be argued to be teaching a primary replica of data and a secondary replica of data;

c. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

The omitted structural cooperative relationships are:

1) the language,

"sending data associated with the data modifying operation...based upon a network topology"

is unclear as to what relationships are being claimed due to the use of the "based on" terminology, for multiple reasons, first, it is not apparent what scope of relationship is being claimed

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between: 1) the activity of sending data, 2) the data being associated with the data-modifying operation, and 3) the network topology, second, it is unclear whether it is the data modifying operation that is "based on" the network topology, or whether, the activity sending data is "based on" the network topology, and third, it is unknown what activity or relationship "based on" implies because the language "based upon" itself, does not express any structural, functional descriptive relationship;

2) the language,
"independently sending..."

is unclear because, the claim does not identify how or by what element the independently sending activity is independent, there is no context in the given claim language relating to the "independent" feature, because presently it is stand-alone, apart from any reference point in the rest of the claim, and absent context, the scope of meaning of "independently sending" cannot be determined since any sending activity must logically be responsive to something in the remainder of claimed elements of this claim so that without more structural cooperative relationship being given in regard to this element, the claim is indefinite;

d. Claims 1 and 14-16, provides for the use of "the data associated with the data-modifying operation", but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced;

Claims 1 and 14-16 are also rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

e. Claims 2, 3 and 15, usage of the term "closest" is use of a relative term which renders the claim indefinite. The term "closest" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be

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reasonably apprised of the scope of the invention. Therefore, the scope of meaning of "closest" cannot be determined without additional contextual information, which the claim does not presently provide;

f. Claim 5, it is unknown what activity is "pipelining transmission of the data";

g. Claims 15 and 16 are indefinite because the language,

"forward the data to another one of the primary replica server (claim 15)"

and

"forwarding the data...to other ones of the primary replica and ...(claim 16)"

suggests that there may, or may not, be more than one primary replica servers, the claims are not clear how many primary replica servers exist in the claim;

h. Claims 10-13, and 17, and 22, the terminology "master" is unknown, the term master is not defined in the claim, master is not a term in the art, master is not in technical dictionaries, and therefore, the term's scope of meaning cannot be determined;

i. Claims 1-22, the use of the terminology "primary replica" and "secondary replica" is confusing as to whether the terms are referring to "data" or whether they are referring to "servers" (i.e., network) which contain data that may be replicas (or copies) of original data; the claims appear to use the term "replica" in more than one sense or meaning, the first use (primary replica) seems to be referring to a primary copy of data, and the second use (primary replica) appears to be referring to the server (file server?) that contains the replica of data, the multiple and diverse use of "replica" having two different meanings is confusing and makes the scope of the claims hard to determine;

j. Claims 2, 14, and 22, it is unknown what functional difference exists between the terminology "sending data" and "pushing data", these appear to be the same activity;

k. remaining dependent claims inherit the deficiencies of the preceding claim in the claim dependency chain.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-9, 14-16 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Liskov et al. (Liskiv), "Replication in the Harp File System", pp 226-238, October 1991.

Liskov teaches the claimed system and method for performing data modifying operations in a file system (claims 1, 14 and 16), teaches the claimed file system (claim 15), and client (claim 22) as the use of the primary copy replication technique in the Harp File System, a replicated Unix file system via the VFS interface over a distributed file system, Introduction, where client calls are directed to a single primary server, which communicates with other backup servers, the closest feature is taught (claims 2, 3, and 22), Introduction, paragraph 3, continuing forwarding feature (claim 4), 4.1 Overview, pipelining data feature (claim 5) is taught, 4.2 Normal Case Processing, apply process, receiving and forwarding data features taught (claims 6 and 7), 4.2 Normal Case Processing, event log processing, the assigning serial number feature (claim 8), 4.2 Normal Case Processing, record log order and counter, application point, the reporting successfully executed feature taught, 4.3 View Changes, Correctness, operations are executed atomically in commit order.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Elmore whose telephone number is (571) 272-4436. The examiner can normally be reached on Mon-Fri from 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 30, 2005


STEPHEN C. ELMORE
PRIMARY EXAMINER